

A Comparison of Oocyte Donors' and Gestational Carriers/Surrogates' Attitudes Towards Third Party Reproduction

Andrea Mechanick Braverman^{1,2} and Stephen L. Corson¹

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Purpose: This study was designed to compare levels of satisfaction for ovum donors and gestational carriers/surrogates (GCS), investigate attitudes, and explore beliefs about the role genetics, gestation, and environment play in various characteristics.

Design: An east coast IVF center and two California-based agencies recruited donor and GCS candidates.

Methods: Participants received mailed questionnaires that included sections on demographics, attitudes, and beliefs.

Results: Both groups were highly satisfied with their participation. Donors were not willing to be GCS, and GCS were not willing to be donors. GCS thought about and disclosed their participation, felt children should be told about GCS, and desired future contact with the child(ren) more than did donors ($p < 0.002$). Donors did not indicate a preference about disclosure. Contact with recipients did not correlate with satisfaction.

Conclusion: Women who chose to donate eggs or to be GCS hold distinct and different beliefs about the role of gestation and genetics.

KEY WORDS: Attitudes; gestational carrier; ovum donation; satisfaction; surrogacy.

INTRODUCTION

Each year the number of women participating as oocyte donors and gestational carriers/surrogates (GCS) grows and, consequently, the option to build a family through ovum donation and gestational carrier programs has become increasingly available to many infertile men and women (1). As the numbers of GCS and donor candidates rise to new levels, there is an increasing need to understand the nature of the individual who chooses to be a third party reproduction volunteer and why she makes this choice to provide better counseling and support as well as to be able to recruit GCS and donor candidates more

efficiently. There have been no studies that have examined whether the beliefs of women who choose to donate eggs are similar to or different from those of women who choose to carry a genetically unrelated pregnancy.

As the choice to participate as an oocyte donor or a GCS becomes increasingly popular, it has become clear to many clinics and agencies that there appear to be real differences between women who choose to donate eggs and those who will carry a pregnancy for an individual or a couple. The motivation for women to donate or to carry a pregnancy remains poorly understood and somewhat controversial. Studies investigating women who choose to carry a nongenetically related pregnancy have suggested that there is an altruistic component (2), while others have suggested that women who choose to carry a genetically related pregnancy have financial motivations in addition to the enjoyment of the pregnancy state (3,4). Studies of

¹ Pennsylvania Reproductive Associates, Thomas Jefferson University, 815 Locust Street, Philadelphia, Pennsylvania 19107.

² To whom correspondence should be addressed; e-mail: bravermanandrea@comcast.net.

women (5–10) who participate as ovum donors suggest multiple motivations: altruistic, helping because of experience with infertility through a friend, and financial. None of these studies have explored the role of participants' beliefs about how genetics or gestation may direct characteristics in the offspring they create.

Clearly, the attitudes women hold about the role of genetics, gestation, and environment have the potential to affect motivation to be donors or GCS. For example, a woman who believes that genetics plays a fundamental role in an offspring's intelligence, personality, and other attributes may feel more comfortable participating as a GCS because she will feel the child she carries is completely separate and different from herself. Women who feel that gestation creates a permanent and important bond with the baby they carry would favor participating as a donor.

The goal of the study was to better understand these women's beliefs about the contribution of genetics or nurture to physical characteristics, disclosure issues to offspring, and views about participation in oocyte donation and gestational carrier programs. A further goal of the study was to compare women from different types of programs and assess their level of satisfaction to determine whether variables, such as contact with recipients, religion, or age, play a significant role in their satisfaction. Improved understanding of the beliefs of third party reproduction volunteers will allow clinics and professionals to provide improved clinical care and anticipate issues that may be important to both oocyte donors and gestational carriers/surrogates.

MATERIALS AND METHODS

Three centers were utilized to recruit donor and GCS candidates who had participated within the last 14 months: 1) an East Coast-based IVF center; 2) two California-based national agencies that were not IVF centers. These three programs represented different geographical areas (e.g., east and west coast cultures) and different environments for the donor (IVF center-based and nonmedical groups). The two California-based agencies were similar commercial entities that provided the recruitment, screening, and matching of oocyte donor candidates; medical treatment was provided by separate IVF centers. Each center listed and contacted every donor and every GCS that had participated within a 14-month time period from the start of the study. This study received IRB

approval. Statistical analysis was done by Student *t* test and Pearson chi-square test. Participants received an introductory covering letter and study materials via mail. The survey included a demographic section, an attitude section of 30 statements, and a section of 15 characteristics. Participants were required to rank-order these 15 characteristics as first, second, or third in order of contribution of the role that genetics, gestation, and environment play in each. In the attitude section, participants had a 5-point Likert scale (ranging from 1 (strongly agree) to 5 (strongly disagree)). The characteristics and attitudes sections were drawn from over 200 clinical interviews with donors that explored the factors that entered into their decision making and issues that the donors and GCS had considered as potential issues in the future. These items were identified as being potentially useful for clinical evaluation of a candidate as well as identifying what attitudes would be correlated with satisfaction postparticipation. Mental health experts, nurses, and physicians in the GCS and donor field evaluated these items for face validity.

RESULTS

A total of 666 study packets were sent to oocyte donors, and 221 were sent to GCS. Overall response rates among programs were 48.8% for oocyte donors and 48.3% for GCS excluding those participants that had moved and left no forwarding address. There were few demographic differences among programs for both donors and GCS. Across programs, the GCS were significantly older (mean age 32.7 ± 4.7) than donors (mean age 27.8 ± 3.5) and were more likely to be married in Program 3 (see Table I). Program 3

Table I. Demographic Variables: Egg Donors

	Program 1 (<i>N</i> = 42)	Program 2 (<i>N</i> = 107)	Program 3 (<i>N</i> = 86)
Age*	27.5 \pm 3.4	26.4 \pm 3.1	29.7 \pm 3.1
Marital status* (single) (%)	52.4	59.8	23.3
Religion (%)			
Christian	50.0	58.8	69.1
None	28.6	28.4	17.3
Race (Caucasian) (%)	97.6	84.8	87.1
No. of cycles (<2) (%)	83.3	81.2	74.1
Meet recipient* (%)	0	13.1	50.0
Know outcome* (%)	11.9	48.6	70.2
Level of satisfaction (good or excellent)	92.7% (<i>M</i> = 3.5)	91.4% (<i>M</i> = 3.4)	94.2% (<i>M</i> = 3.5)

* *p* < 0.05, chi-square test.

Table II. Demographic Variables: Gestational Carriers/Surrogates (GCS)

	Program 1 (<i>N</i> = 16)	Program 2 (<i>N</i> = 14)	Program 3 (<i>N</i> = 50)
Age	32.2 ± 5.1	31.4 ± 4.8	33.1 ± 4.6
Marital (married) (%)	93.8	92.9	91.8
Religion (%)			
Christian	75.1	78.5	86.0
None	6.3	14.3	7.0
Race (Caucasian) (%)	93.3	92.9	89.8
Level of satisfaction (good or excellent)	100.0% (<i>M</i> = 3.9)	84.6% (<i>M</i> = 2.9)	95.2% (<i>M</i> = 3.7)
GCS pregnancies (%)			
At least one	87.5	57.1	69.4
None	2.5	42.9	30.6
Contact with child (%)	100.0	77.8	94.9

* $p < 0.05$, chi-square test.

donors were more likely to meet the recipient and know the outcome. Program 1 did not offer the opportunity for donors and recipients to meet. These differences reflected program options and philosophies. Across the programs, the GCS were similar in all characteristics (see Table II) except for their overall satisfaction in the program. There was significantly poorer response from Program 2 by GCS.

Overall, both donor and GCS groups were highly satisfied with their participation, and there were no significant differences between the two groups regarding their satisfaction. As a group, 55.3% participants ranked their experience as excellent, 39.0% good, 4.7% fair, and 1.0% poor across programs. Most donors had completed one cycle (46.0%) or two cycles (25.7%). Only 21.6% had completed more than two cycles. Approximately 25% of the donors had met the recipients, and contact with the recipients did not predict to her level of satisfaction. Half of the donors knew the outcome of their donation, and this also did not predict to the donor's level of satisfaction with her participation.

Half of the GCS had experienced one pregnancy while 20.3% had experienced more than one pregnancy as a GCS. Only 8.6% of GCS had ever donated ovum. Unlike ovum donation, 93.5% of GCS had contact with the intended parents.

Gestation Versus Genetics Versus Environment

Both donor and GCS groups held similar attitudes overall about the importance that genetics, gestation, and environment play in the role of various physical, artistic, and cognitive characteristics. However, there were specific within-group differences regarding attri-

Table III. First-Rank Opinion on Genetics, Gestation, and Environment of Characteristics

	Donor (%)	GC/S (%)
Weight		
Genet.	68.1	82.5
Gest.	3.4	3.5
Envir.	24.3	10.0
Intelligence		
Genet.	61.7	76.3
Gest.	4.3	
Envir.	28.5	17.5
Humor		
Genet.	32.3	30.0
Gest.	4.7	2.5
Envir.	57.9	62.5
Health		
Genet.	51.5	53.8
Gest.	14.5	16.3
Envir.	26.0	23.8
Personality		
Genet.	41.3	55.0
Gest.	4.7	1.3
Envir.	48.9	40.0
Values		
Genet.	3.8	10.0
Gest.	5.5	1.3
Envir.	86.4	83.5
Ambition		
Genet.	10.2	8.8
Gest.	5.5	1.3
Envir.	80.0	85.0
Music		
Genet.	58.3	57.5
Gest.	4.7	1.3
Envir.	30.6	35.0
Sports		
Genet.	55.7	56.3
Gest.	4.7	1.3
Envir.	34.0	35.0
Hobbies		
Genet.	10.6	16.3
Gest.	4.7	1.3
Envir.	78.7	77.5
Academic		
Genet.	26.8	23.8
Gest.	5.1	1.3
Envir.	63.4	70.0

Note. Genet. = genetics; Gest. = gestation; Envir. = environment.

bution of genetics or environment to characteristics, such as height, weight, eye color, intelligence, and musical ability (see Table III). Gestation was not considered to play an important role in any of the characteristics investigated. More GCS (76.5%) felt genetics played the most important role in determining intelligence than did donors (61.5%) ($p < 0.02$).

Donors and GCS agreed that physical characteristics such as height and eye color are determined by genetics. Approximately half of both groups felt environment contributed to weight; the rest of donors and GCS were split between attributed weight to genetic

and gestational factors. The majority of both groups felt environment contributed to sense of humor. Half of both groups felt health was determined by environment. Within the donor and GCS groups, personality was attributed almost equally to both environment and genetics. Both groups felt that environment contributed to a person's values and level of ambition. The slight majority of both groups saw musical ability and sports ability as being influenced more by genetics; environment was considered the second strongest influence. Hobbies and career interests were seen by the majority of donors and GCS to be determined by environment.

Attitudes Held by Donors and GCS

There were significant differences in the attitudes held by donors and GCS (see Table IV). Donors were not willing to be GCS and GCS were not willing to be donors. Donors felt that they would not carry a

pregnancy more than would GCS ($p < 0.007$). To a greater degree than donors, GCS thought about and disclosed their participation, felt children should be told about their reproductive role, and desired future contact with the child(ren) ($p < 0.002$). Donors did not indicate a preference about disclosure to offspring; contact with recipients did not correlate with satisfaction with their experience. GCS were more negative about participating with a homosexual couple (either male or female) or a single woman ($p < 0.002$). GCS agreed that their compensation was fair to a greater degree than that of donors ($p < 0.009$).

GCS tended to agree more with statements that indicated greater comfort level with gestational carrying/surrogacy than did ovum donors. For example, GCS felt that there were fewer emotional consequences for children born through surrogacy/carrier programs ($p < 0.001$) and that carriers should not be limited to three pregnancies ($p < 0.032$). Both GCS and donors agreed that donors should be limited to

Table IV. Comparison of Attitudes of GCS and Donors

	GCS mean score	Donor mean score	<i>p</i> value
I think about my participation as an egg donor/GCS frequently	1.9	2.9	0.0001 ^a
I have shared my participation as a donor/GCS with friends	1.3	1.9	0.0001 ^a
I have shared my participation as a donor/GCS with family	1.3	2.1	0.0001 ^a
I believe that child(ren) born through my donation should be told about me	2.1	3.1	0.0001 ^a
I believe that financial compensation for my participation was fair	1.8	2.1	0.009 ^a
I would be willing to be a GCS (for donors) or donor (for GCS)	3.5	4.0	0.007 ^a
I believe children born by GCS should be told about the carrier	2.4	2.7	0.002 ^a
I believe the government should have regulations for egg donation	3.0	3.0	ns
I believe the government should have regulations for GCS programs	3.3	2.8	0.005 ^a
I rarely think about the child(ren) born through my donation/carrying	4.0	3.0	0.0001 ^a
I would like to have contact in the future with the child if s/he wants contact	1.8	2.9	0.0001 ^a
I believe that there should be a national registry for egg donors	2.6	2.5	ns
I believe donors should be limited to four cycles	2.9	2.8	ns
I believe carriers should not carry a pregnancy for another couple more than three times	3.1	2.8	0.032 ^a
I would donate/carry again for another couple	1.8	2.0	ns
I believe that egg donation and sperm donation present similar emotional issues to families	2.4	2.9	0.036 ^a
I believe that the woman who carries the pregnancy has an important effect on the child even after birth	3.0	2.7	0.039 ^a
I believe intended parents should be able to use both an egg donor and a carrier to have a baby	1.7	2.0	0.003 ^a
I would donate/carry for a gay couple (male homosexuals)	3.7	2.7	0.0001 ^a
I would donate/carry for a gay couple (female homosexual)	3.7	2.7	0.0001 ^a
I would donate for a single woman	3.3	2.3	0.0001 ^a
I believe egg donation is okay for a gay couple (male)	3.2	2.5	0.0001 ^a
I believe egg donation is okay for a gay couple (female)	3.3	2.5	0.0001 ^a
I believe there should be financial compensation for egg donation	1.8	1.4	0.0001 ^a
I believe that egg donors have the right to anonymity even if the child wants contact	2.3	2.0	0.012 ^a
I believe that the children born through a gestational carrier will have no emotional consequences	2.4	3.0	0.001 ^a
I believe that the children born through egg donation will have no emotional consequences	2.8	2.8	ns
I believe that there should be a psychological assessment for gestational carriers prior to attempting a pregnancy	1.3	1.4	ns
I believe that there should be a psychological assessment for egg donors prior to attempting a pregnancy	1.5	1.6	ns
I believe that there should be a psychological assessment for intended parents before being involved in either gestational carrier or egg donation programs	1.3	1.4	ns

^a Significant difference between groups by Student *t* test.

four cycles. They disagreed that donors feel that the "woman who carries the pregnancy has an important effect on the child even after birth" more than do GCS ($p < 0.039$); GCS neither agreed nor disagreed about this statement.

Offsprings' Rights

Donors and GCS agreed that they would be willing to have contact with the offspring from their participation if the child(ren) wants contact. GCS were more willing for contact than were donors ($p < 0.0001$). Although willing, donors as a whole were closer to endorsing a more neutral stance of neither agree nor disagree. In addition, donors were neutral about children being told about the donor's participation, but GCS felt children should be told ($p < 0.0001$). Neither group indicated an opinion about government regulations concerning ovum donation, whereas donors felt there should be more government regulation for GCS programs ($p < 0.005$).

GCS thought about the children born through their participation more than did donors ($p < 0.0001$); donors did not indicate whether or not they thought about their offspring. Both groups endorsed the establishment of a national donor registry. Both agreed that donors have the right to anonymity even if the child wants contact but donors felt that more strongly than did GCS ($p < 0.012$). Agreement was strong between the two groups that there should be psychological assessment for GCS, donors, and intended parents through either program.

Discussion

Initial concerns about what type of woman would volunteer to be either a gestational carrier/surrogate or an ovum donor have yielded to a greater level of comfort that volunteers, whether paid or not, do so for many good reasons and not for reasons that are pathological (11,12). Certainly, financial compensation has been considered a major influence on participants' decision (13). More recent attention has been directed towards untangling the multifaceted influences on an individual's decision to donate or to carry.

Sperm donation has existed long before ovum donation or gestational carrying/surrogacy entered the realm of choice for infertile individuals and couples. There have been a number of studies exploring the attitudes of semen donors towards issues of willingness and desire to be contacted by offspring in the future (14–17). The two American studies on sperm donors

were done about a decade ago and may not reflect accurately sperm donor's attitudes as they exist today when sperm banks offer much more information and choice to both donors and recipients. Both studies suggested that there are both financial and altruistic motivations for sperm donors.

Most of the more recent studies have been done in European countries and may not accurately reflect the sentiments and attitudes of American men. In the United States, there is a great deal of value placed on autonomy and privacy. These values may influence semen donors' attitudes differently than those of their European counterparts. The studies have suggested that semen donors' attitudes may be influenced by variables such as age and marital status; the younger student donors were more financially motivated, and this may suggest that they may be more likely to see donation independent of any long-term implications. Another study (18) suggested that 30% of semen donors felt children should be told of their donor origins and 40% felt it was up to the parents. Half of these donors had also shared with someone else that they had participated as sperm donors. There is agreement among studies (18,19) with regard to semen donor's attitudes about being identified in the future. One study (17) found that 63% of donors would not donate if they could be identified. In the most recent American study (18), researchers found that potential donors were more likely to donate sperm if the sperm was going to be used for nonreproductive reasons such as research projects and that if potential donors were going to donate sperm for reproductive uses, they were more likely to participate if there was a financial incentive.

Less is known about women who participate as ovum donors or GCS. Early studies of women who participate as gestational carriers and oocytes donors clearly established that these women were not motivated by any psychopathology (2–10). In the authors' 1992 study of GCS, psychological testing described an unremarkable population (2). GCS participants stated that their motivation was the desire to help another person and that this fulfilled positive narcissistic needs on their part. The desire to help another person was also found to be a major motivating factor in the decision to donate eggs among women (5–10), but this has not been studied recently or in-depth to see whether it predicts satisfaction. Although financial motivation has been documented as a motivation for donors (13), other studies suggest that greater financial motivation may be negatively correlated with donor satisfaction (10).

Regardless of whether donor motivation predicts to donor satisfaction, the majority of studies shows that overall donors are satisfied with their participation. Several studies (5,6,10) also ranked donor satisfaction high. In the most recent study, Kalfoglou and Gittelsohn (20) investigated donors from a cross-section of programs and clinics as well as locations. None of the participants regretted their decision to donate. However, the authors identified areas in which agencies and clinics could improve donor satisfaction. The areas identified focused mostly on logistical issues such as minimizing trips to the clinic or risk of complications; the study also suggested that disclosing the outcome to donors would increase their feelings of satisfaction with their participation.

Similar to most studies, a limitation to our study is that there is no way to determine how responders differed from nonresponders.

In our study, the donors were also very satisfied with their donation. Only a small minority of donors felt their experience was fair (4.7%) or poor (1.0%). In Kalfoglou and Gittelsohn's qualitative study, they suggested that disclosing outcome to donors would increase satisfaction levels. However, in this study, among a large cross-section of participants from both agencies and a clinic, no single factor emerged (such as knowing the outcome, age, religion, or contact with the intended parent) to predict donor or GCS satisfaction levels.

Much attention has been given to potential differences between donor and GCS due to regional differences or differences in recruitment techniques. The question of whether an agency with no medical affiliation would identify a different donor or GCS candidate than would an ART clinic has been asked but never answered. Our study suggests that the population of women from two large west coast agencies with Internet presence was similar to that of an east coast ART clinic. In other words, the population of donors and that of GCS were homogeneous and that method of recruitment did not have an impact on the donors' or GCS' characteristics, demographics, or level of satisfaction with their experience.

Donors and GCS participants held a great number of different attitudes regarding the contributions that genetics, gestation, and environment play in the development of offspring. Overall, GCS endorsed genetics playing a stronger role than did ovum donors. Since the GCS participants did not have a genetic link to the child they delivered, the attribution of genetics to the child's physical characteristics or capabilities did not reflect upon them. Interestingly, egg donors

did not view characteristics such as intelligence as genetically determined as did their GCS counterparts; this may create a greater comfort level for donors to assign greater input from the intended parents and, in turn, diminish their role.

Environmental, that is, nurture, influences were felt by both GCS and donors to play a large role in many of the characteristics introduced. Both groups were clear that more Mendelian factors such as eye color and height are genetically based. Yet, weight, sense of humor, personality, values, and ambition were seen by at least half of both groups to be based in environmental influences. Consequently, both groups, regardless of whether they contributed genetic material or gestation, viewed the intended parents as having a major influence in their child(ren)'s development.

It was very clear that donors were not willing to carry a pregnancy for someone else, and GCS were not willing to donate their ova. The differences in their attitudes may shed some insight into why these two third-party reproductive methods attract different participants. Donors felt that the "woman who carries the pregnancy has an important effect on the child even after birth," whereas the GCS neither agreed nor disagreed with that statement. GCS felt there were fewer emotional consequences for children born through GCS than did donors. GCS agreed that their compensation was fairer than that of the donors.

Overall, GCS reported less agreement than did donors ($p < 0.0001$) that "I rarely think about the child born through my donation/carrying"; donors were neutral regarding this statement. GCS had relationships with the intended parents. Obviously, a relationship during a pregnancy will be a more involved one and may engender different reactions and thoughts. A potential GCS must be comfortable tolerating thoughts about the resulting children in a different manner than is a donor. Therefore, it is not surprising that GCS want contact with the children and feel that the children should know about the GCS' reproductive role.

Donors were less willing to have contact with offspring than were GCS; overall both groups were willing to have contact with donors endorsing a more neutral attitude about having contact. This is distinctly different from earlier studies of semen donors where the majority of donors expressed an unwillingness for contact. As the trend grows for parents to disclose to their offspring that an ovum donor was involved in their conception, they may need to consider that not all donors are willing to be contacted. Certainly, there have been no longitudinal studies to see whether the

degree of willingness or unwillingness to meet adult offspring changes over time. Initially, within a year of donation, it appears that donors are not clear about their willingness and the door may remain open to contact.

There has been an increasing voice among professionals that gamete donors (and by extrapolation GCS) have a social responsibility (21). This social responsibility demands that third party reproduction participants consider the rights and needs of the offspring on the basis of their participation. Both groups endorsed the establishment of a national donor registry. This is the first data available about donor's attitudes towards a donor registry. Heretofore, there has been debate about the benefits and risks of establishing a registry. There is a strong voice among professionals that a registry is greatly needed, regardless of whether it provides identifying data to adult donor offspring (22), but there is also vocal opposition to a registry (23).

Even though donors may not all be willing to have contact, this does not mean that they are unwilling to establish a donor registry with information. It is important to note that, despite their willingness to give accurate and current medical information, donors and GCS felt that donors had a right to privacy in the future even if the child wants contact. Donors and GCS may have more of a sense of social responsibility than heretofore has been recognized. The trend in the literature suggests this possibility; the majority of donors in one study (24) were willing to be blood donors, donors were found to be willing to have contact with the offspring (18), and the donors expressed willingness to endorse a national donor registry in this study. Does this not suggest that donors (and perhaps GCS) believe they have a responsibility to families created through their donated ova and a greater willingness to provide ongoing medical updates for the offspring?

There was an agreement among donors and GCS that participants need to be responsible. All agreed that there should be psychological assessment for donors, GCS, and intended parents. Donors did express more concern about GCS and felt that there should be more regulation for GCS programs; GCS felt that there should not be limits on the number of pregnancies they carry, more so than donors. Neither group felt that the government needed to have regulations for ovum donation, but both agreed that donors should be limited to four cycles. It is not the absolute number of cycles that was the critical concern for donors and GCS; rather they feel that there should not be an unlimited horizon for donation or carrying.

Programs allow choices and set boundaries about diverse issues such as disclosing the outcome of the donation or allowing a participant's choice in an intended parent's characteristics (e.g., sexual orientation, age, religion). These program policies can set into motion emotional needs and/or desires for the donor or GCS. For example, a donor who feels strongly about working with a single woman and wants information on the outcome may have a very different level of satisfaction with her experience if she is matched with a single woman and has information disclosed to her about the outcome and recipient after her cycle is completed. Exploring a potential donor's or GCS' beliefs about the input of genetics and nurture may also help in selecting a candidate who has greater satisfaction with her participation.

This study was limited by the short time elapsed since participation as a donor or GCS. There is a very strong need to have long-term follow-up studies with these participants in order to understand whether these attitudes change over time and whether feelings of satisfaction change over time. In the meantime, this study does show that donors and GCS are very satisfied with their experience and are very open to the possibility that their responsibility does not end with their participation. As studies begin to explore what the parents' and children's needs are as these families age, better recruitment of volunteers can be made and, most importantly, more information can be gathered from donors and GCS who are willing to provide information at the time of participation and in the future.

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